

MICHAEL L. HALL

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Objective I would like to develop numerical models of physical systems and publish the results.

Education **Ph. D. in Nuclear Engineering, March 1988**

North Carolina State University, Raleigh, NC
Thesis title: Numerical Modeling of the Transient Thermohydraulic Behavior
of High Temperature Heat Pipes for Space Reactor Applications.
Minor in Mathematics
Advisor: Dr. J. Michael Doster
GPA: 4.000/4.000.

B. S. in Nuclear Engineering, May 1983

North Carolina State University, Raleigh, NC
GPA: 3.895/4.000.

Honors Graduated Summa Cum Laude in 3 years, while enrolled in the Engineering Honors Program, which included advanced classes and an individual project. Dean's List every semester. Elected Outstanding Senior in the Nuclear Engineering Department. Leader of the group that won the 1983 American Nuclear Society Student Design Competition.

Areas of Knowledge Extensive experience in numerical methods, especially in the numerical solution of ordinary differential equations and coupled systems of partial differential equations. Extensive physical modeling experience. Knowledge of the methodology involved in thermal hydraulics codes such as RETRAN, RELAP, TRAC, COBRA and VIPRE. Knowledge of neutronics and radiation transport modeling, including Monte Carlo and discrete ordinates methods.

Affiliations

- Member of the American Nuclear Society (Intermittent student member: 1980-1988, Full member: 1988-Present, editor of Topical Meeting Proceedings).
- Member of Sigma Xi ($\Sigma\Xi$), the Scientific Research Society (Associate Member: 4/89-11/90, Full Member: 11/90-Present).
- Member of Phi Kappa Phi ($\Phi\Kappa\Phi$), Honor Society which inducts the top 3% of the junior class (2/82-Present).
- Member of Pi Mu Epsilon ($\Pi\mu\epsilon$), Mathematics Honor Society (4/86).
- Member of Tau Beta Pi ($\tau\beta\pi$), Engineering Honor Society which inducts the top 12.5% of the junior class (12/81-Present).
- Member of Mensa (3/86-Present) and Intertel (93).
- Member of Phi Eta Sigma ($\Phi\eta\Sigma$), Freshman Honor Society (1980).

Fellowships & Scholarships

- Nuclear Engineering, Health Physics, and Radioactive Waste Management Fellowship from the Department of Energy, United States Government, administered by Oak Ridge Associated Universities (8/83–8/87).
- National Merit Scholarships (8/80–5/81 and 8/80–5/83).
- Institute of Nuclear Power Operations Scholarship (8/81–5/83).
- Bechtel Scholarship (8/82–5/83).
- Aubrey Lee Brooks Scholarship (8/80–5/83); Branham Scholarship (8/80–5/81); Greensboro, NC Youth-of-the-Year (80) and Youth-of-the-Month (6/80) Scholarships; Greensboro, NC Jaycees Outstanding Local Youth Scholarship (80); Youth-of-the-Year (one of five) for the state of North Carolina (80).

Work Experience

4/88–Present

Los Alamos National Laboratory – worked as a Technical Staff Member on various projects in the area of numerical modeling. Projects included: radiation transport on unstructured meshes (the AUGUSTUS and SPARTAN packages); high-speed flow modeling with the PAGOSA code; neutronic modeling for the Accelerator Driven Assembly (ADA) project; code development to model the thermal hydraulic flow of hydrogen in the Nuclear Thermal Rocket (NTR); thermohydraulic heat pipe modeling (an extension of my thesis); target/blanket design for the Accelerator Transmutation of Waste (ATW) project; development of the SIMMER-III code, which numerically models liquid metal fast breeder reactors (LMFBRs) during core disruptive accidents; modifications of a large production code (500,000 lines of FORTRAN) used for weapons design.

5/85–8/85 Los Alamos National Laboratory – worked with the Safety Code Development Group of the Energy Division (Q-9) as a practicum for my DOE fellowship.

Computer Experience

Languages

FORTRAN, the L^AT_EX document preparation system, the PostScript page definition language, c-shell and Bourne shell scripts, Makefiles, elisp, awk, BASIC.

Operating Systems

Unix, Unix System Administration, CTSS, Vax/VMS.

Computers

Sun systems; Cray systems; Thinking Machines: CM-200, CM-5; Vax systems (VMS and Ultrix).

Codes

I developed the AUGUSTUS package (diffusion equation solution on unstructured quadrilateral meshes), the SPARTAN package (Simplified P_n transport solution with v/c terms), the KLAXON code (transient, thermal hydraulic, high temperature, sonic gas flow modeling used in the design of the Nuclear Thermal Rocket), and the THROHPUT code (transient thermal hydraulic heat pipe modeling).

Hobbies/Interests

Homebrewing, objectivism (Ayn Rand), aquaria, strategy games, reading, backpacking, traveling.

References & Transcripts

Available upon request.